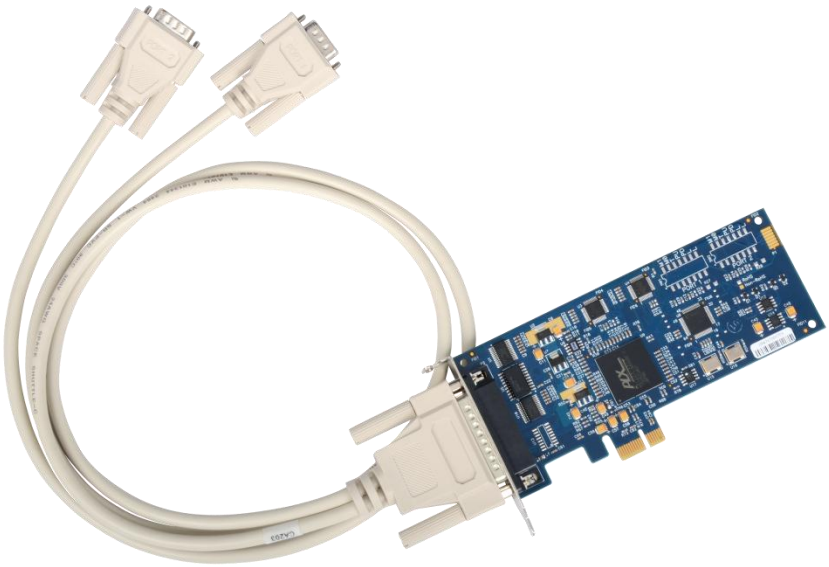
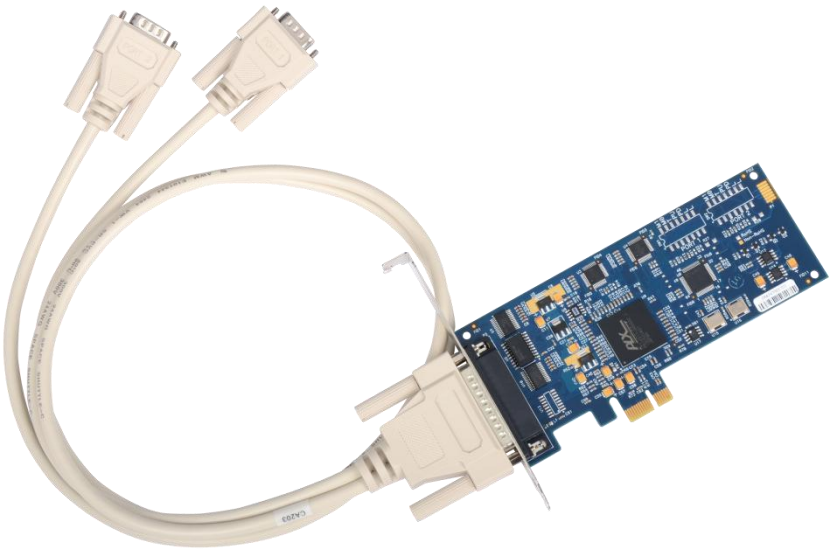
SEALEVEL

COMM+232.PCIe

USER MANUAL





Item# 7202e & 7202eS

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Introduction

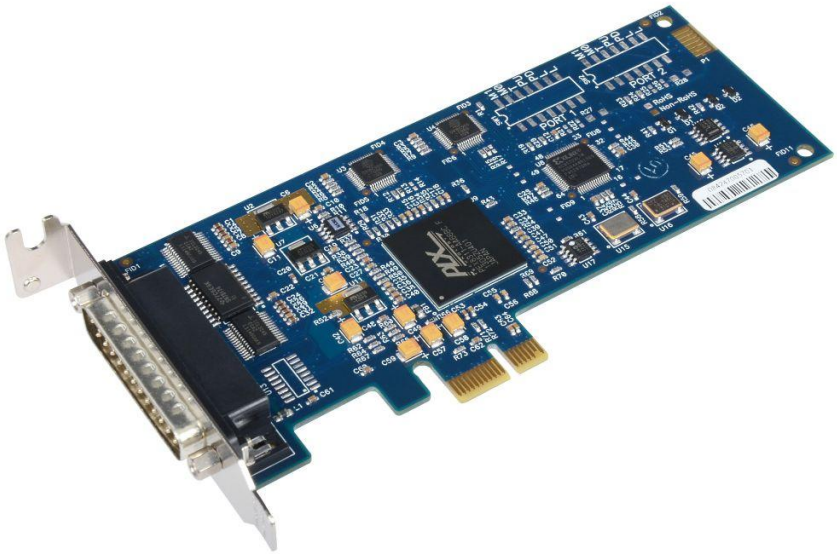
The Sealevel COMM+232.PCIe (Item# 7202e) provides a PCI Express 1.0a compliant interface adapter with two asynchronous RS-232 serial ports for industrial automation and control applications and support data rates to 921.6K bps.

All modem control signals are implemented for maximum compatibility with a wide range of serial peripherals. The Sealevel SeaCOM software driver and utilities make installation and operation easy on the XP, Vista, Windows 7, and Windows 8 operating systems.

The 7202e ships with a low profile PC bracket for use in systems with a low profile PCI Express slot. If you need a standard size PC bracket, order the 7202eS.

FEATURES

- PCI Express two-port serial interface adapter
- High performance 16C950 UART with 128-byte FIFOs
- Each port supports data rates to 921.6K bps
- Oscillator and clock prescalar support wide range of baud rates
- Supports 9-bit protocol framing
- PCI Express 1.0a compliant via X1 connector
- Compatible with all low profile and standard size PCI Express slots
- All modem control signals implemented in RS-232 mode
- Includes 36” cable that terminates to two DB9M connectors



Before You Get Started

WHAT'S INCLUDED

Depending on the PC bracket ordered, the 7202e is shipped with the following items. If any of these items are missing or damaged, please contact Sealevel for replacement.

- COMM+232.PCIe– Two-Port RS-232 Serial Interface
  - 7202e – PCI Express Board with Low Profile PC Bracket
  - 7202eS – PCI Express Board with Standard Height PC Bracket
- CA203 – DB25F to (2) DB9M Cable, 36" in Length
- Sealevel Software CD – SeaCOM software and user manual

ADVISORY CONVENTIONS

Warning - The highest level of importance used to stress a condition where damage could result to the product or the user could suffer serious injury.

Important – The middle level of importance used to highlight information that might not seem obvious or a situation that could cause the product to fail.

Note – The lowest level of importance used to provide background information, additional tips, or other non-critical facts that will not affect the use of the product.

OPTIONAL ITEMS

Depending upon your application, you are likely to find one or more of the following items useful with the 7202e. All items can be purchased from our website (www.sealevel.com) by calling our sales team at (864) 843-4343.

DB9F to DB25M (RS-232) Extension Cable (Item# CA177)	
The CA177 is a standard AT-style RS-232 modem cable with a DB9F connector on one end and a DB25M connector on the other. This cable is 72 inches in length.	
DB9F to DB9M Extension Cable (Item# CA127)	
The CA127 allows users to extend a DB9 cable up to six feet. The connectors are pinned one-to-one so the cable is compatible with any device or cable that has DB9 connectors.	
DB9F to RJ45 Modular Adapter (Item# RJ9S8)	
The RJ9S8 is a DB9 female to RJ45 adapter. It can be configured without tools and is an excellent choice for using available infrastructure wiring.	

Hardware Description

PCI EXPRESS BOARD

The 7202e is a low profile PCI Express 1.0a compliant board via single-lane x1 slot. It can be used in any single- or multi-lane PCI Express slot. It is available in standard height PCI Express as item# 7202eS.

DB25M BOARD CONNECTOR

The board integrates a DB25 male connector for interfacing the two serial ports via the included cable.

DB9M SERIAL CONNECTORS

The 7202e ships with a two-port cable (Item# CA203) that includes a pair of DB9 male serial connectors. The pin out for these connectors is detailed in the following Technical Description section.

Technical Description

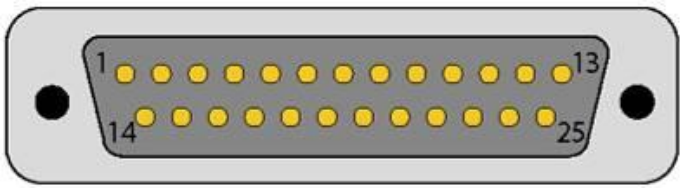
Each serial port utilizes a 16C950 UART featuring programmable baud rates, data format, interrupt control and industry-leading 128-byte transmit and receive FIFOs. This high-performance UART includes 9-bit framing support and is fully software compatible with legacy 16550 applications. In addition, the 14.7456 oscillator and UART's flexible clock prescaler supports the widest range of standard and non-standard baud rates to 921.6K bps. Refer to Appendix C for cable length limitations.

CONNECTOR PIN ASSIGNMENTS

BOARD CONNECTOR (DB25 MALE)

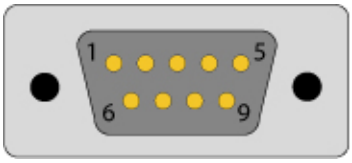
The 7202e board includes a DB25 male connector for attaching the included cable (Item# CA203). The pin out for the DB25M connector is shown in the table below.

Port 1 Pin#	Port 2 Pin#	RS-232
1	11	RD
2	12	CTS
3	13	DCD
4	14	TD
5	15	RTS
6	16	DSR
7	17	DTR
8	18	RI
9	10	GND



CABLE PIN ASSIGNMENTS

The 7202e includes a cable (Item# CA203) with a DB25 female connector terminating to a pair of DB9 male connectors. The DB25F connector on the cable plugs into the DB25M connector on interface board. The DB9M connectors are compatible with a variety of serial peripherals. The pin assignments for the supported electrical interfaces are shown in the tables below.



RS-232 (DB9 MALE)

These RS-232 pin assignments meet EIA/TIA/ANSI-574 DTE specifications for DB9 type connectors.

Pin #	Signal	Name	Mode
1	DCD	Data Carrier Detect	Input
2	RD	Receive Data	Input
3	TD	Transmit Data	Output
4	DTR	Data Terminal Ready	Output
5	GND	Ground	
6	DSR	Data Set Ready	Input
7	RTS	Request To Send	Output
8	CTS	Clear To Send	Input
9	RI	Ring Indicator	Input

Note: Please terminate any control signals that are not going to be used. The most common way to do this is connect RTS to CTS and RI. Also, connect DCD to DTR and DSR. Terminating these pins, if not used, will help insure you get the best performance from your adapter.

BAUD RATES AND OSCILLATOR VALUE

The 7202e utilizes a 14.7456MHz oscillator, which is automatically entered by the SeaCOM driver under Windows 2000/XP/Vista/7 operating systems. The oscillator value can be found in the COM port properties of Device Manager under the 'Advanced Tab'.

The high-speed oscillator and the UART's flexible clock prescaler support a wide range of standard and non-standard baud rates. You simply need to select the appropriate baud rate in your communications software and the driver will calculate the closest matching baud rate.

When you use the board in other operating systems, the baud rate you select is multiplied by eight resulting in the actual, faster baud rate. This allows the board to achieve data rates to 921.6K bps.

The following table shows common baud rates and the baud rates you need to select in your application running on operating systems other than Windows.

For this Data Rate	Choose this Data Rate
1200 bps	150 bps
2400 bps	300 bps
4800 bps	600 bps
9600 bps	1200 bps
19.2K bps	2400 bps
38.4K bps	4800 bps
57.6K bps	7200 bps
115.2 K bps	14.4K bps
230.4K bps	28.8K bps
460.8K bps	57.6 K bps
921.6K bps	115.2 K bps

If your communications package allows the use of baud rate divisors, choose the appropriate divisor from the following table:

For this Data Rate	Choose this Divisor
1200 bps	768
2400 bps	384
4800 bps	192
9600 bps	96
19.2K bps	48
38.4K bps	24
57.6K bps	16
115.2K bps	8
230.4K bps	4
460.8K bps	2
921.6K bps	1

Software Installation

This section contains helpful information pertaining to the installation of supported Sealevel Systems, Inc. software packages. First, the process of acquiring the software is discussed. Next, the installation is detailed in a step-by-step guide for Windows.

WHERE TO GET SEALEVEL SOFTWARE

All Sealevel products are shipped with media containing the installers for each software package available. If the media is otherwise unavailable or, if desired, the current versions of Sealevel software packages can be obtained from the Sealevel website (see following instructions). If you already have the Sealevel software, proceed to the Windows Installation section.

Sealevel software for Windows is available on our website:

- Software for Windows

- On the software web page, click on the 'Download File' link to download the current driver.
- Proceed to the Manual Software Installation guide for your operating system.

WINDOWS INSTALLATION

Do not install the hardware until the software has been successfully installed.

To install Sealevel software, you must log in as an administrator or have administrator privileges in Windows.

1. Insert the Sealevel media into your PC.
2. If the 'AutoRun' feature is enabled for this media the software will automatically launch.
3. Otherwise, navigate to the root directory of the media and double-click the 'autorun.exe' application to launch the installation window.
4. Select 'Install' as demonstrated in the image below.

5. Type the part number for your adapter in the text box and press the 'Enter' key, or click on the drop box to scroll from the listing to select your product.

SEALEVEL
Install | Support | Literature | Browse CD
Install.
PRODUCT FINDER
View Manuals
Install Drivers
Click here if you installed hardware before software
Type part number (e.g. 2105) in the box above or click the drop box to scroll.
Then press the Enter key to locate the appropriate manual and driver.
sealevel.com | support@sealevel.com | sales@sealevel.com | 864.843.4343

If you installed your hardware prior to loading/installing the software, please click on the 'Click here if you installed hardware before software' link and follow the listed instructions.

6. Click the 'Install Drivers' button to launch the Installation Wizard.

7. When the InstallShield Wizard' window appears, click the 'Next' button to initiate the software installation.

8. When the 'License Agreement' window appears, accept the terms and click 'Next' to continue. You can click the 'Print' button to print out a copy of the agreement for your records. If you do not accept the terms of the agreement, the installation will stop.

9. When the 'Ready to Install the Program' window appears, click the 'Install' button to install the software onto the hard drive of your computer. The files will be automatically installed into the 'C:\Program Files' folder on your computer. Some versions of Windows will halt the installation and provide you with a dialog box which will ask you for permission for the installer to make changes to your

computer. Click on the 'Allow' button to continue installation of your Sealevel software.

10. The following dialog box may appear, as shown below. Click the 'OK' button to continue.

SeaCOM - InstallShield Wizard
During installation, you may receive a warning indicating drivers being installed may not be certified by Microsoft's certification labs. If you receive this message you should click 'yes' to allow installation. All applications and drivers have been fully tested to maintain the integrity of your operating system.
OK

All Sealevel Systems software drivers have been fully tested by Sealevel. Clicking 'OK' will not harm your system.

11. The following dialog box may appear, as shown below. Click the 'OK' button to continue.

SeaCOM - InstallShield Wizard
If SeaCOM has previously been installed on this computer, you should go to the Device Manager and uninstall any SeaCOM cards. You should also reboot your computer before installing any card(s).
OK

This is a notification that if you are upgrading from a previous driver version, you should remove the associated Device Manager hardware entries and reinstall the adapter after the installing the SeaCOM software.

12. The setup file will automatically detect the operating environment and install the proper components. Next follow the information presented on the screens that follow. Once the installation is complete, close the disk installation window.

13. Refer to the Physical Installation section to connect and install your adapter.

MANUAL SOFTWARE INSTALLATION

1. To install a software package from the Sealevel media, browse the Sealevel Systems media 'Software' directory. For example: Software\SeaCOM\Windows\SeaCOM Installer.exe

2. If you are using Windows Vista or newer operating systems, right click on the installer executable and choose 'Run as Administrator'. If you are using an operating system prior to Windows Vista, double click on the executable to launch the InstallShield and initiate the driver installation.

3. Please refer to step seven above in the Guided Software Installation section and follow the remaining installation steps.

UPGRADING TO THE CURRENT SeaCOM DRIVER

1. Download the current driver using the Instructions from the Where to Get Software section above. Please take note of the destination directory it will save to.

2. Uninstall the currently loaded driver SeaCOM driver found in the Control Panel. Prior to Windows Vista SeaCOM will be populated in 'Add/Remove Programs' list. In Vista and newer OSs it will be found in the 'Programs and Features' list.

3. Navigate to the Device Manager and remove the Sealevel adapter by right clicking on the line item choosing 'Uninstall'. Depending on your product, it can be found under either 'Multiport Serial adapters' or 'Universal Serial Bus controllers'.

4. In the Device Manager under 'Action', choose 'Scan for Hardware changes'. This will prompt the installation of the adapter and associate it with the newly installed SeaCOM driver.

Hardware Installation

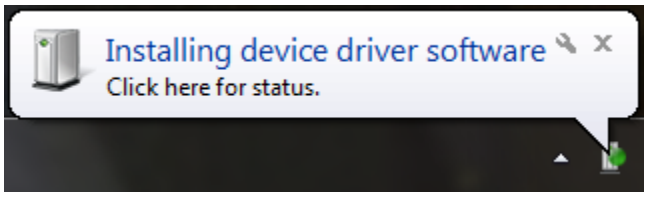
Do not install the PCI Express board until the software has been successfully installed.

The 7202e does not need to be configured prior to installation.

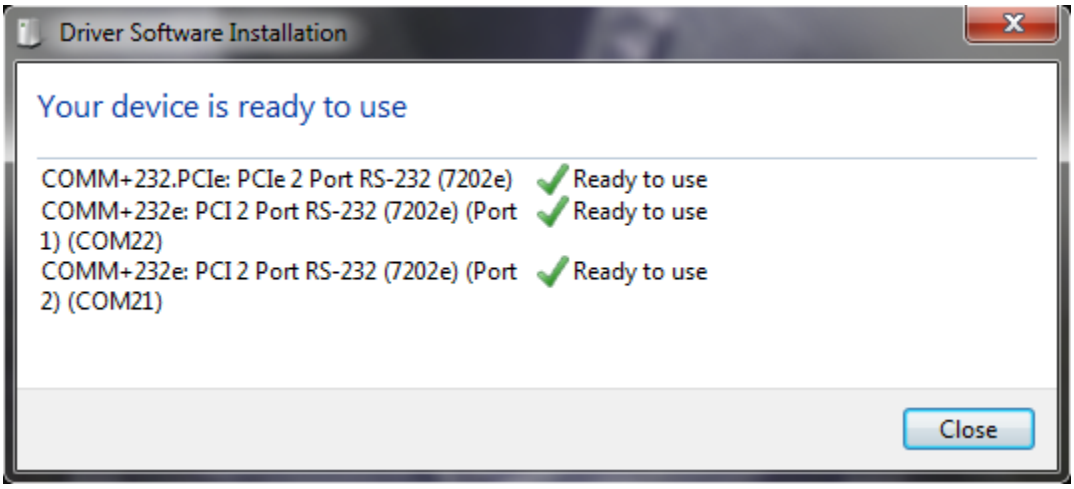
Once you have installed the SeaCOM software, install the board into an available PCI Express slot and boot the computer. The Found New Hardware wizard will appear. The drivers that were installed during the software installation process will automatically be used to configure the adapter.

The following instructions are applicable to the Windows 7 operating system and may vary depending on your version of Windows.

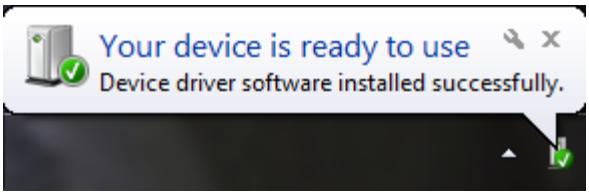
1. After the software installation is complete, install the 7202e into an available PCI Express slot and boot the computer.
2. A 'Found New Hardware' alert will appear above the system tray.



3. If the alert bubble is clicked, the following window will appear.


Driver Software Installation
Your device is ready to use
COMM+232.PCIe: PCIe 2 Port RS-232 (7202e) Ready to use
COMM+232e: PCI 2 Port RS-232 (7202e) (Port 1) (COM22) Ready to use
COMM+232e: PCI 2 Port RS-232 (7202e) (Port 2) (COM21) Ready to use
Close

4. When the 'Found New Hardware' alert informs you that your hardware is installed and ready to use, you can proceed with verifying the installation to check functionality if necessary.

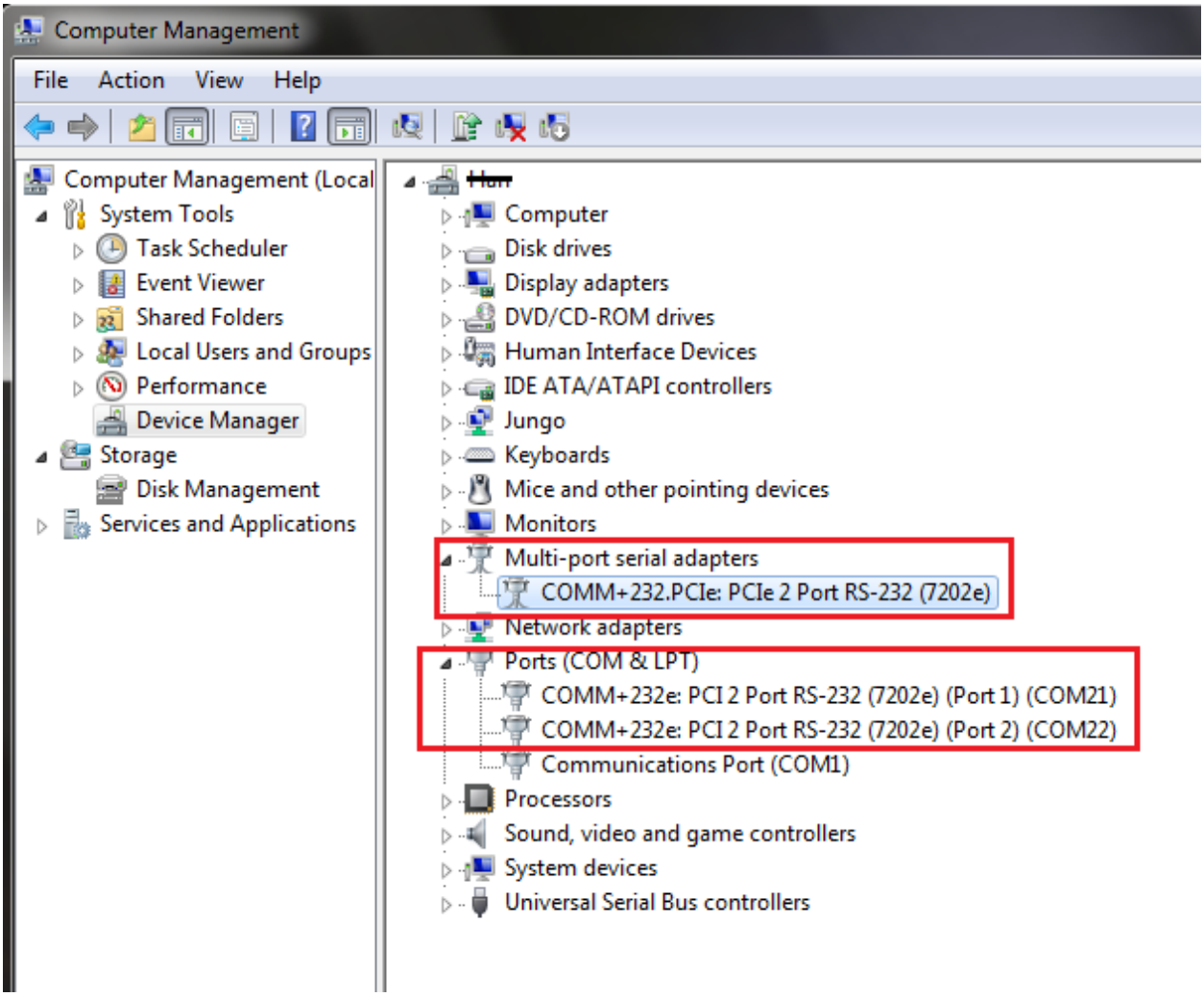


VERIFYING INSTALLATION

To confirm that the SeaCOM card has been successfully installed and recognized by your operating system, look in the Windows Device Manager.

To access Device Manager, follow the steps below:

1. Right click on 'My Computer' icon on your desktop or in the Start menu.
2. Click 'Manage' in the fly out menu to launch the 'Computer Management' console window.
3. In the left pane under 'System Tools', click 'Device Manager'.
4. In right pane near the bottom, expand the 'Multi-Port Serial Adapters' section by clicking the arrow '>' symbol. This shows the parent device is installed correctly.
5. You should see the card assignment listed as 'COMM+232.PCIe: PCIe 2 Port RS-232 (7202e)'.
6. Expand the 'Ports (COM & LPT)' section by clicking the arrow '>' symbol. This shows that all the ports have installed correctly.
7. There should now be two ports labeled 'COMM+232e: PCI 2 Port RS-232 (7202e) (Port X) (COMYY)' where X is the port number on the card, and YY is the COM number the OS has assigned to the ports. The COM numbers can be reassigned at any time.



The 7202e is now ready for use.

UNINSTALL & UPGRADE INSTRUCTIONS

The SeaCOM software program adds entries to the system registry that are necessary for specifying the operating parameters for your device. To completely remove the hardware and associated software, follow the steps in the order they appear.

To upgrade to the latest version of SeaCOM, follow the instructions to uninstall the hardware and software, followed by the upgrade instructions.

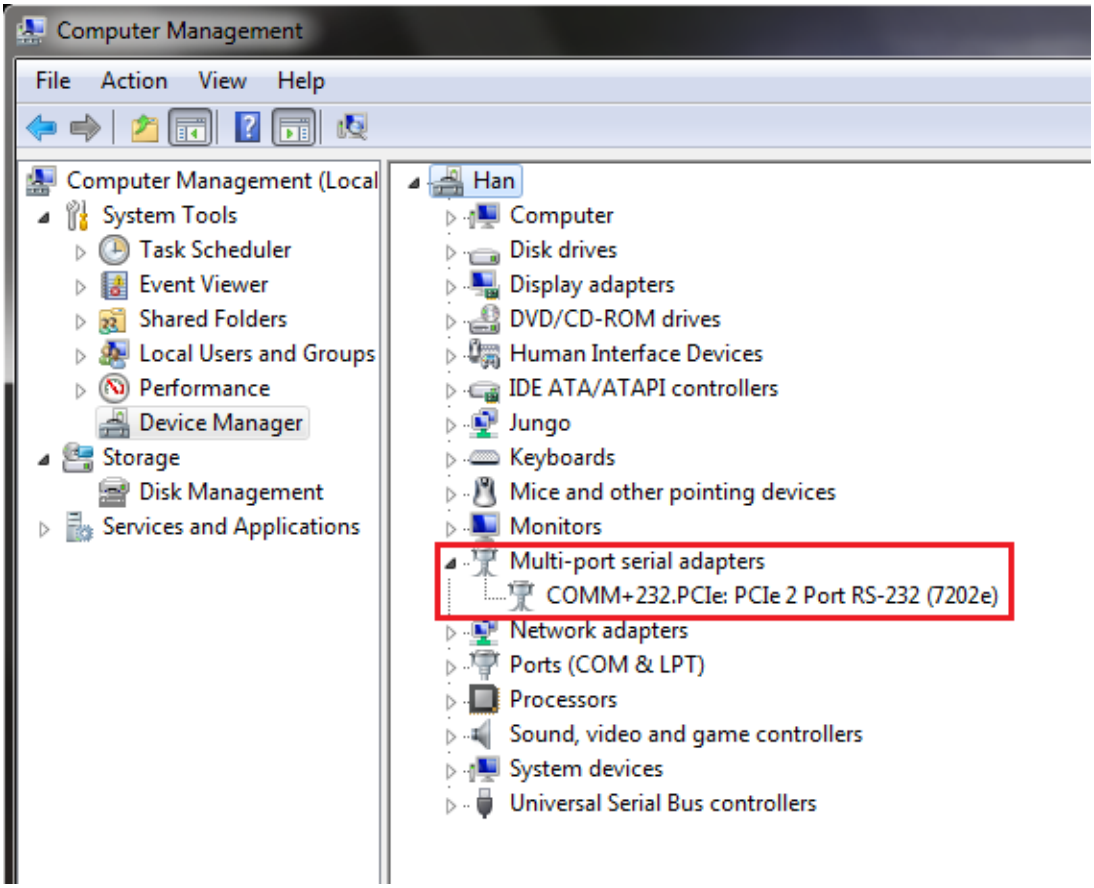
Important!
Start with the hardware installed in a PCI Express slot.
Do not remove until instructed to do so.

There are two methods for removing the software references from the Windows OS: Device Manager and Control Panel. Each method is described below.

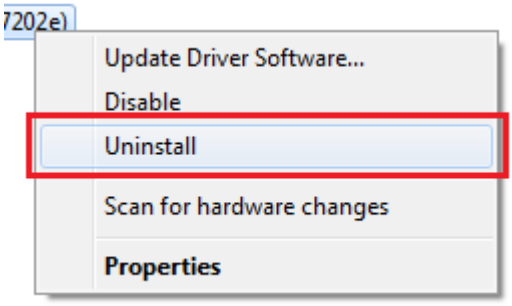
REMOVE HARDWARE USING DEVICE MANAGER

To access Device Manager, follow the steps below:

1. Right click on 'My Computer' icon on your desktop or in the Start menu.
2. Click 'Manage' in the fly out menu to launch the 'Computer Management' console window.
3. In the left pane under 'System Tools', click 'Device Manager'.
4. In right pane near the bottom, expand the 'Multi-port serial adapters' section by clicking the arrow '>' symbol.
5. Locate the 7202e device in the listing.



6. Right click on the entry for the 7202e device and click 'Uninstall' in the fly out menu.



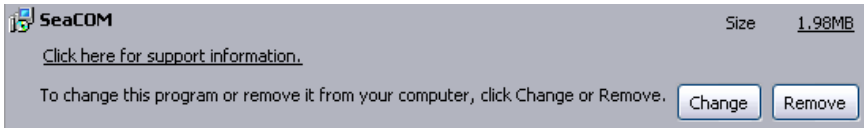
7. Confirm that you want to uninstall the device by clicking the 'OK' button. This will remove the hardware, COM ports and all registry entries from your computer. Clicking the 'Cancel' button will keep the device installed.

Confirm Device Uninstall
COMM+232.PCIe: PCIe 2 Port RS-232 (7202e)
Warning: You are about to uninstall this device from your system.
OK
Cancel

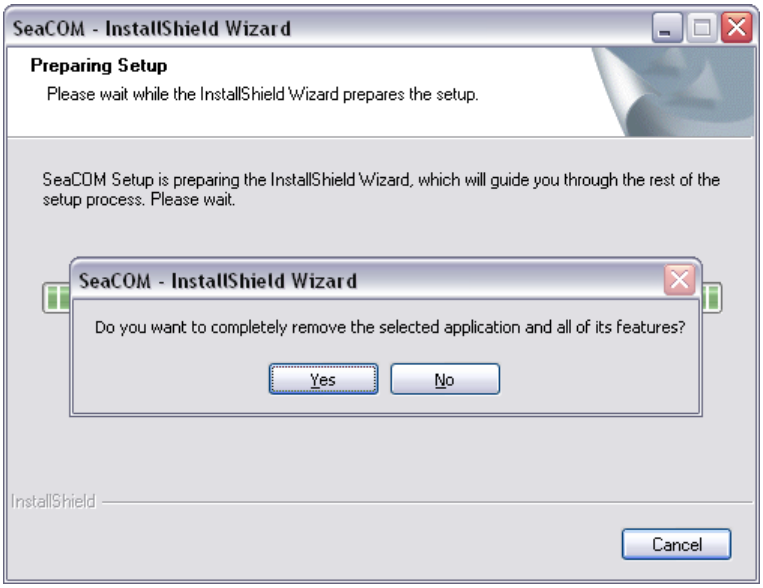
8. The window will refresh and the entry for the device will no longer appear. Proceed with removing the software on the following pages.

REMOVE SOFTWARE USING CONTROL PANEL

1. Access the Control Panel by clicking the 'Start' button, and then 'Control Panel'.
2. In the Control Panel window, double-click the 'Add or Remove Programs' icon (In Windows Vista and 7, it is labeled 'Programs and Features').
3. The Add or Remove Programs window will list all currently installed software on your system. It may take a while to load all of the software installed. Locate the entry for 'SeaCOM' and click to highlight.
4. Click the 'Remove' button.


SeaCOM
Size 1.98MB
Click here for support information.
To change this program or remove it from your computer, click Change or Remove.
Change
Remove

5. The 'SeaCOM – InstallShield Wizard' window will appear along with a dialog box asking you to confirm. Click the 'Yes' button to continue.


SeaCOM - InstallShield Wizard
Preparing Setup
Please wait while the InstallShield Wizard prepares the setup.
SeaCOM Setup is preparing the InstallShield Wizard, which will guide you through the rest of the setup process. Please wait.
SeaCOM - InstallShield Wizard
Do you want to completely remove the selected application and all of its features?
Yes
No
InstallShield
Cancel

6. When the uninstallation completes, click the 'Finish' button to close the window. Click the 'Ok' button on the dialog box.

HARDWARE REMOVAL

At this point, you have removed all software references from your computer. If you are upgrading, leave the device installed and proceed to the Upgrade Instructions section. Otherwise, if you want to completely remove the hardware and software from your computer, power down your computer, remove the device from the PCI Express slot, and then reboot your computer to complete the uninstallation.

UPGRADE INSTRUCTIONS

With the device still installed in a PCI Express slot, install the latest version of SeaCOM. You can download the latest version of SeaCOM from the product page on the Sealevel website. Follow the software installation steps detailed in the preceding 'Software Installation' section.

1. Once the SeaCOM software has been installed successfully, access Device Manager.
2. At the top of the 'Device Manager' window, click 'Action', and then click 'Scan for Hardware Changes'.
3. The 'Found New Hardware Wizard' window will appear. Select 'No, not this time', and then click the 'Next' button.
4. Refer to the 'Hardware Installation' instructions in the preceding section to complete the upgrade.
5. When the 'Found New Hardware' alert informs you that your hardware is installed and ready to use, you can proceed with verifying the installation to check functionality and/or locate the COM port assignments, if necessary.

Technical Specifications

DIMENSIONS

Length	Width
5.75”	2.54”
14.60 cm	6.45 cm

ENVIRONMENTAL SPECIFICATIONS

Specification	Operating	Storage
Temperature Range	0º to 70º C (32º to 158º F)	-50º to 105º C (-58º to 221º F)
Humidity Range	10 to 90% R.H. Non-Condensing	10 to 90% R.H. Non-Condensing

POWER REQUIREMENTS

Supply Line	Requirements
12VDC	121mA (1.4W)
3.3VDC	218mA (0.7W)

MANUFACTURING

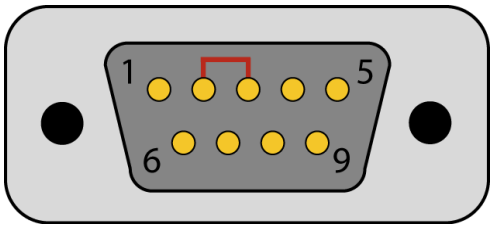
All Sealevel Systems Printed Circuit boards are built to UL 94V0 rating and are 100% electrically tested. These printed circuit boards are solder mask over bare copper or solder mask over tin nickel.

Appendix A – Troubleshooting

Once you have confirmed that the serial adapter COM ports are listed in Device Manager, use the Sealevel WinSSD utility to verify communications. Detailed help is included in the WinSSD utility.

If you have a loopback plug, put it on the adapter connector. If you do not have a loopback plug, you can use female jumper wires to make the connection to verify the functionality.

RS-232 requires pins 2 (Receive) & 3 (Transmit) to be jumpered as shown in this graphic:

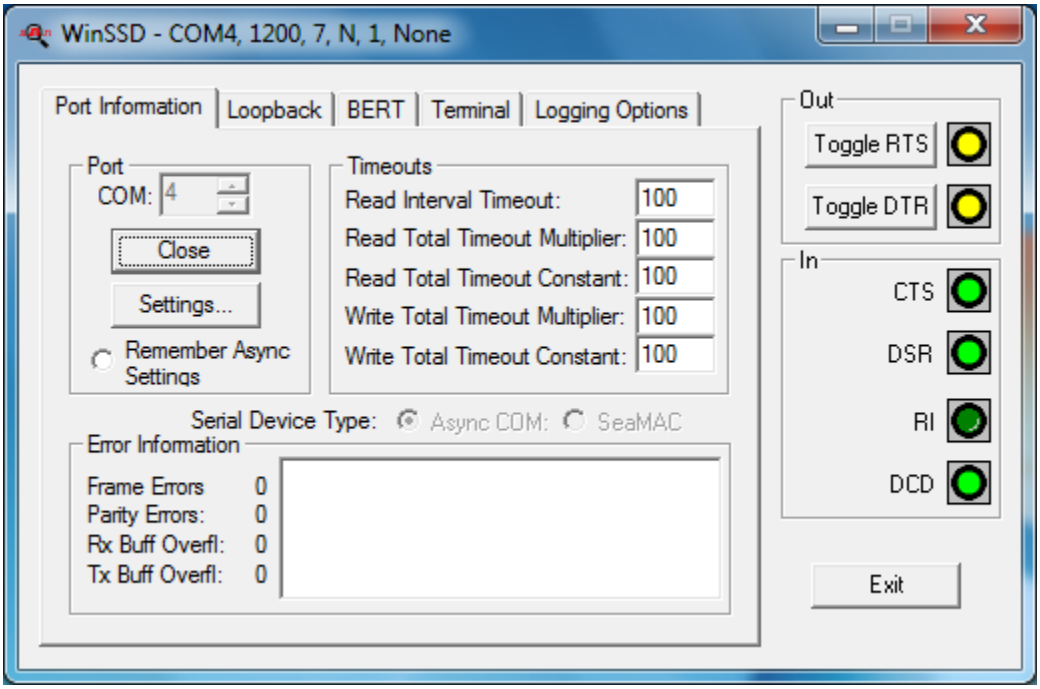


If you do not have a loopback plug or jumper wires handy, you can use a metal device such as a knife, screwdriver, key or paperclip to short pins two and three.

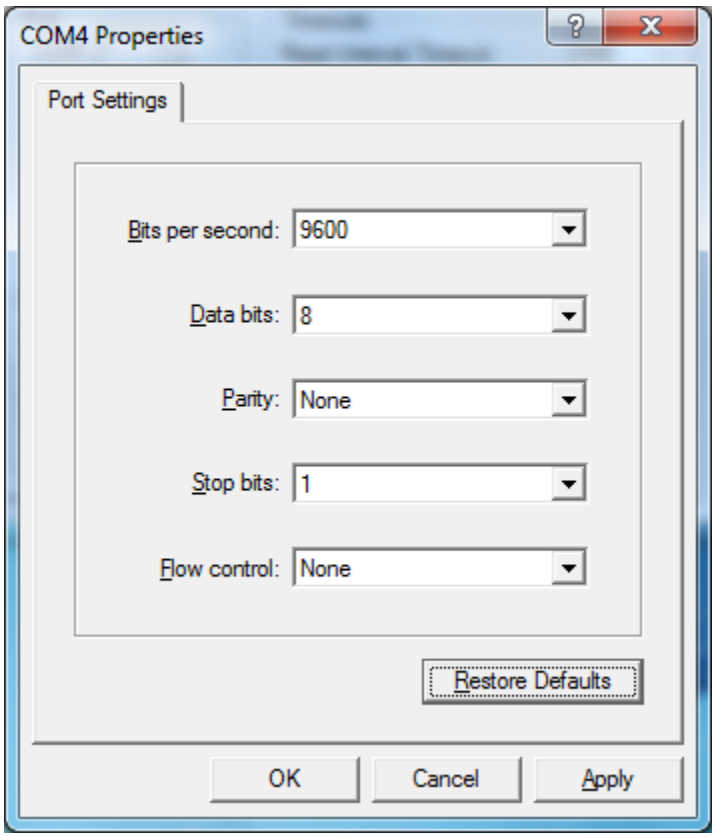
To test communications, launch the WinSSD utility in the SeaCOM folder in the 'Start' menu.

On the 'Port Information' tab, select the associated COM port and click the 'Open' button.

This will first open the COM port. From this tab the port can also be closed (See image below). Click the 'Settings' button to open the COM Port Properties dialog box. This will allow the Port Settings to be altered.



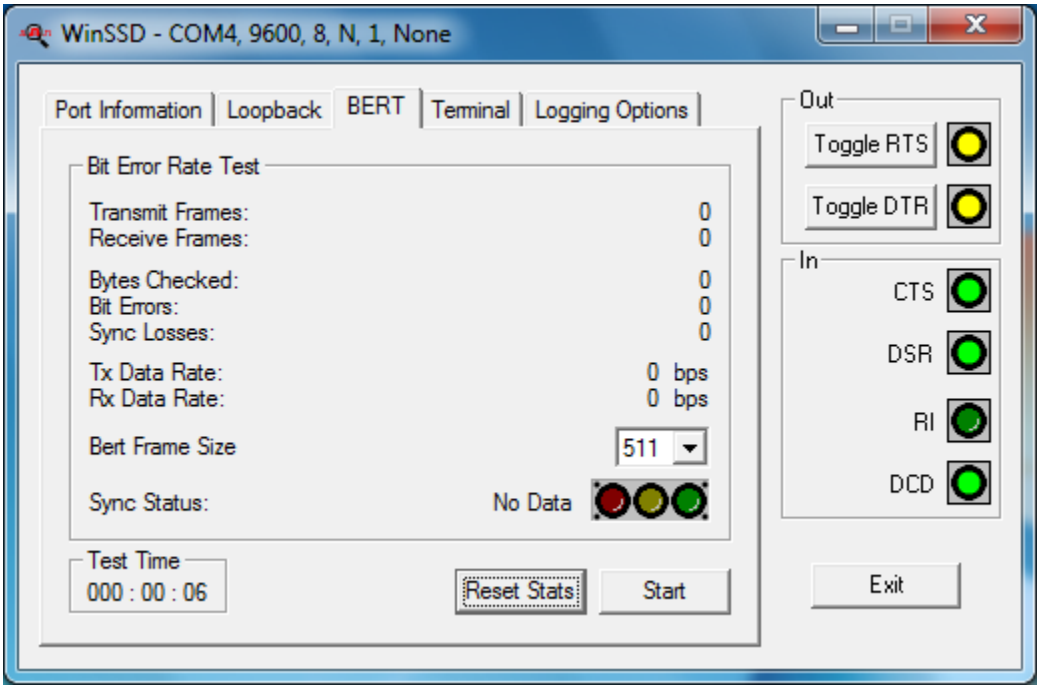
Change your parameters to 9600 bits per second, 8 data bits, no parity, 1 stop bit, and no flow control, as pictured below.



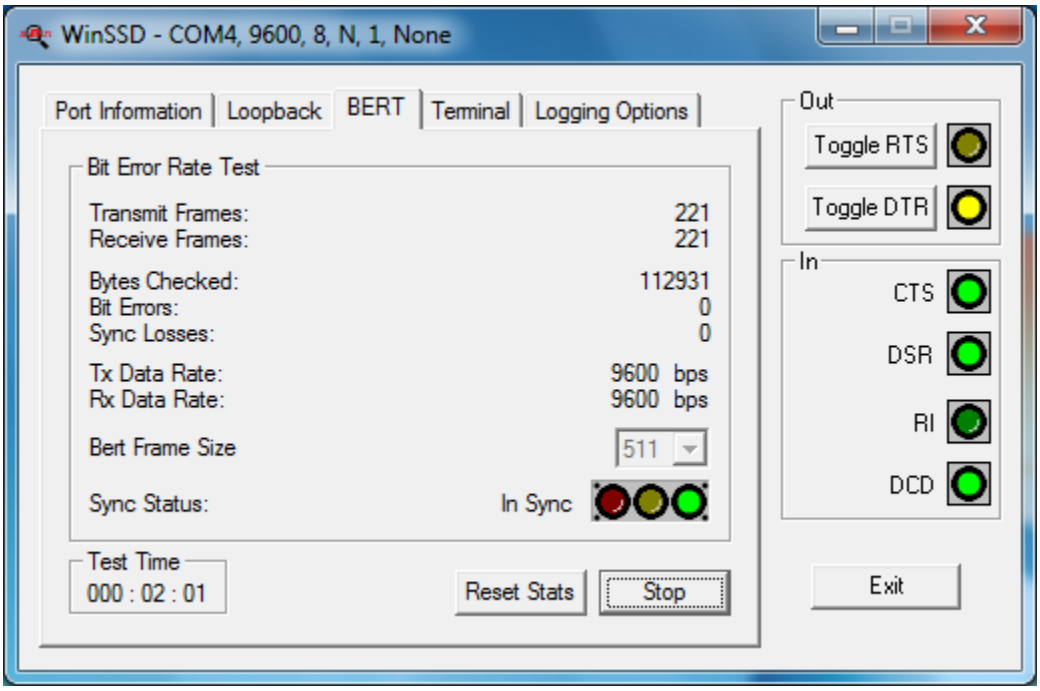
Click ‘Apply’ and ‘OK’.

In the main WinSSD window, click on the ‘BERT’ tab (Bit Error Rate test).

Click on the ‘Start’ button.



If the COM port is properly working, the Sync Status green light will glow and the Transmit Frames and Receive Frames will increase. The Tx and Rx Data Rates will show the calculated data rate.



This verifies that the adapter is working properly. You can continue testing this port with different configurations or proceed with testing other ports, if necessary.

Appendix B – Handling Instructions

ESD WARNINGS

ELECTROSTATIC DISCHARGES (ESD)

A sudden electrostatic discharge can destroy sensitive components. Proper packaging and grounding rules must therefore be observed. Always take the following precautions:

1. Transport boards and cards in electrostatically secure containers or bags.
2. Keep electrostatically sensitive components in their containers, until they arrive at an electrostatically protected workplace.
3. Only touch electrostatically sensitive components when you are properly grounded.
4. Store electrostatically sensitive components in protective packaging or on anti-static mats.

GROUNDING METHODS

The following measures help to avoid electrostatic damages to the device:

5. Cover workstations with approved antistatic material. Always wear a wrist strap connected to a properly grounded workplace.
6. Use antistatic mats, heel straps, and/or air ionizers for more protection.
7. Always handle electrostatically sensitive components by their edge or by their casing.
8. Avoid contact with pins, leads, or circuitry.
9. Turn off power and input signals before inserting and removing connectors or connecting test equipment.
10. Keep work area free of non-conductive materials such as ordinary plastic assembly aids and Styrofoam.
11. Use field service tools such as cutters, screwdrivers, and vacuum cleaners that are conductive.

Appendix C – Electrical Interface

RS-232

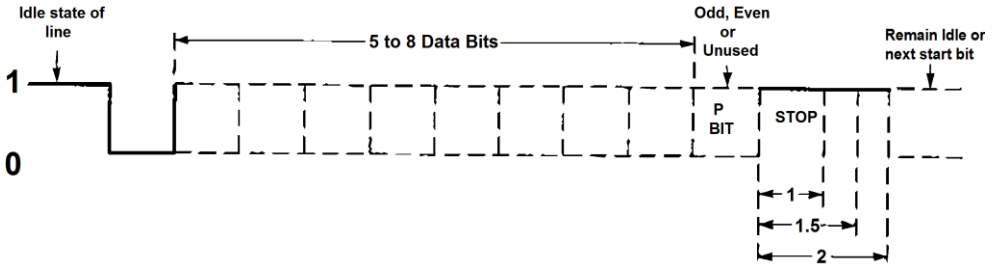
Quite possibly the most widely used communication standard is RS-232. This implementation has been defined and revised several times and is often referred to as RS-232 or EIA/TIA-232. The IBM PC computer defined the RS-232 port on a 9-pin D-sub connector, and subsequently, the EIA/TIA approved this implementation as the EIA/TIA-574 standard. This standard is defined as the 9-Position Non-Synchronous Interface between Data Terminal Equipment and Data Circuit-Terminating Equipment Employing Serial Binary Data Interchange. Both implementations are in widespread use and will be referred to as RS-232 in this document. RS-232 is capable of operating at data rates up to 20K bps at distances less than 50 ft. The absolute maximum data rate may vary due to line conditions and cable lengths. RS-232 is a single-ended or unbalanced interface, meaning that a single electrical signal is compared to a common signal (ground) to determine binary logic states. The RS-232 and the EIA/TIA-574 specification define two types of interface circuits: Data Terminal Equipment (DTE) and Data Circuit-Terminating Equipment (DCE).

Appendix D – Asynchronous Communications

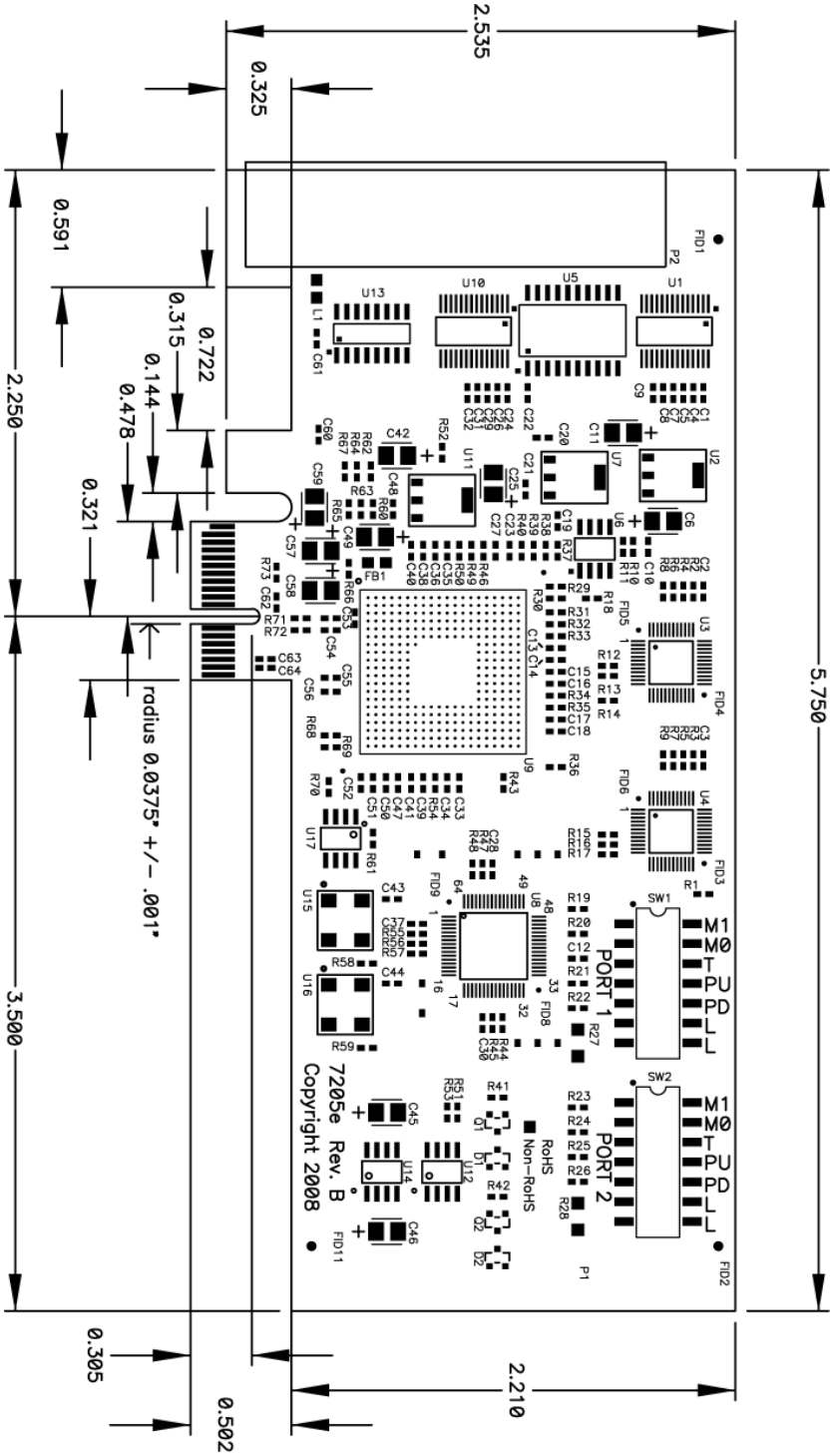
Serial data communications implies that individual bits of a character are transmitted consecutively to a receiver that assembles the bits back into a character. Data rate, error checking, handshaking, and character framing (start/stop bits) are pre-defined and must correspond at both the transmitting and receiving ends.

Asynchronous communications are the standard means of serial data communication for PC compatible and PS/2 computers. The original PC was equipped with a communication or COM port that was designed around an 8250 Universal Asynchronous Receiver Transmitter (UART). This device allows asynchronous serial data to be transferred through a simple and straightforward programming interface. A starting bit followed by a pre-defined number of data bits (5, 6, 7, or 8) defines character boundaries for asynchronous communications. The end of the character is defined by the transmission of a pre-defined number of stop bits (usually 1, 1.5 or 2). An extra bit used for error detection is often appended before the stop bits. The diagram below demonstrates asynchronous communication bits.

This special bit is called the parity bit. Parity is a simple method of determining if a data bit has been lost or corrupted during transmission. There are several methods for implementing a parity check to guard against data corruption. Common methods are called (E)ven Parity or (O)dd Parity. Sometimes parity is not used to detect errors on the data stream. This is referred to as (N)o parity. Because each bit in asynchronous communications is sent consecutively, it is easy to generalize asynchronous communications by stating that each character is wrapped (framed) by pre-defined bits to mark the beginning and end of the serial transmission of the character. The data rate and communication parameters for asynchronous communications have to be the same at both the transmitting and receiving ends. The communication parameters are baud rate, parity, number of data bits per character, and stop bits (i.e., 9600,N,8,1).



Appendix E – Mechanical Drawing



Warranty

Sealevel's commitment to providing the best I/O solution is reflected in the Lifetime Warranty that is standard on all Sealevel manufactured I/O products. Relio™ industrial computers are warranted for a period of two years and the R9 family is warranted for a five year period from date of purchase. We are able to offer this warranty due to our control of manufacturing quality and the historically high reliability of our products in the field. Sealevel products are designed and manufactured at its Liberty, South Carolina facility, allowing direct control over product development, production, burn-in and testing. Sealevel achieved ISO-9001:2008 certification in 2011.

WARRANTY POLICY

Sealevel Systems, Inc. (hereafter "Sealevel") warrants that the Product shall conform to and perform in accordance with published technical specifications and shall be free of defects in materials and workmanship for the warranty period. In the event of failure, Sealevel will repair or replace the product at Sealevel's sole discretion. Failures resulting from misapplication or misuse of the Product, failure to adhere to any specifications or instructions, or failure resulting from neglect, abuse, accidents, or acts of nature are not covered under this warranty.

Warranty service may be obtained by delivering the Product to Sealevel and providing proof of purchase. Customer agrees to insure the Product or assume the risk of loss or damage in transit, to prepay shipping charges to Sealevel, and to use the original shipping container or equivalent. Warranty is valid only for original purchaser and is not transferable.

This warranty applies to Sealevel manufactured Product. Product purchased through Sealevel but manufactured by a third party will retain the original manufacturer's warranty.

NON-WARRANTY REPAIR/RETEST

Products returned due to damage or misuse and Products retested with no problem found are subject to repair/retest charges. A purchase order or credit card number and authorization must be provided in order to obtain an RMA (Return Merchandise Authorization) number prior to returning Product.

HOW TO OBTAIN AN RMA (RETURN MERCHANDISE AUTHORIZATION)

If you need to return a product for warranty or non-warranty repair, you must first obtain an RMA number. Please contact Sealevel Systems, Inc. Technical Support for assistance:

Available	Monday – Friday, 8:00AM to 5:00PM EST
Phone	864-843-4343
Email	support@sealevel.com

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